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Examiner Chen-wen Jian**REMARKS/ARGUMENTS****Amendment to the claims**

The addition of new claims 30-34 is supported by the disclosure in for example paragraphs 12, 13, 33 and 34.

Restriction requirement

As explained below, it is believed that linking claims 1, 27, 28 and 29 are allowable. Pursuant to MPEP 809, the restriction requirement should be withdrawn, and claims 5-14, 28 and 29 rejoined.

Priority

The certified copy of the priority document will be filed upon receipt of an indication of allowance.

Claims 1-4, 16, 17, 18 and 27 have been rejected under 35 USC 103 as being unpatentable over Whitmore in view of Lew. Applicant respectfully traverses this rejection.

Claim 1 requires the following method steps:

1. A method for controlling gas cooling in a gas pipeline having a heat exchanger at a compressor station, the method comprising the steps of:
 - A) obtaining observations of parameters that are characteristic of gas flow through the compressor station under a set of operating conditions having a corresponding energy cost;
 - B) from the observations of step A, determining a balance between gas cooling and heat exchanger gas pressure loss that results in an

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improvement of energy savings by comparison with the energy cost of the set of operating conditions; and

C) operating a bypass valve on the gas pipeline to divert an amount of gas into the heat exchanger that achieves the balance determined in step B.

Whitmore is completely different from the claimed invention in claim 1. First, Whitmore does not deal with cooling at compressor stations. Whitmore's device is intended to operate between compressor stations (Whitmore, col. 11, lines 20-23). Hence, Whitmore does not disclose either elements A or B of claim 1. Second, Whitmore provides for all or no by-pass using the by-pass valve 16 (Whitmore, col. 10, lines 5-10). Hence, Whitmore does not disclose element C of claim 1. Third, Whitmore does not disclose a controller of any kind. Whitmore is entirely irrelevant. For the same reasons, Whitmore does not disclose the use at a compressor station, transmitters or controller of claim 27 or method steps B and C of claim 28.

Lew is also completely different from the claimed invention in claim 1. First, Lew operates a control valve 82 to control an amount of flow of gas through a re-cycle loop 32 and a conduit 66. The re-cycle loop 32 re-cycles some of the gas cooled in cooler 48 to the input 18 of the gas compressor 10 for the purpose of surge control (Lew, col. 1, lines 32-35). The diversion of gas in conduit 66 is used for the purpose of cooling the gas downstream of the compressor (Lew, col. 2, lines 28-38) to a set temperature. Lew attempts to achieve a set point temperature (Lew, col. 6, lines 50-59). In some situations, Lew will override temperature control due to for example an abnormal pressure drop (Lew, col. 7, line 2-16). Nothing in Lew suggests the steps of method step B of claim 1 of the instant application, and consequently Lew does not teach the steps of method step C in claim 1. The same argument applies to method steps B and C of claim 28. Also for the same reason, Lew does not disclose the controller of claim 27.

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In summary therefore, neither Whitmore nor Lew teach the method steps B or C of claims 1 or 28, nor the corresponding controller of claim 27. Hence, combination of Whitmore and Lew cannot yield the invention and cannot render claims 1, 27 or 28 unpatentable. Further, since nothing in Whitmore suggests variable control of by-pass flow, Lew and Whitmore are not properly combinable. All Whitmore discloses is an alternative cooling device for a pipeline for a very limited application. Accordingly, it is believed that claims 1, 27 and 28, the independent claims, are all patentable, and that the remaining claims should be allowed for the same reasons.


New claims 30-34 further distinguish the cited references since the references do not discuss or suggest taking into account downstream compression power requirements in deciding how much cooling should take place at a compressor station.

Allowable Subject Matter

The applicant thanks the examiner for the indication of allowable subject matter, but in view of the arguments set forth above, believes that all claim rejections should be withdrawn.

Reconsideration and withdrawal of the rejections, and allowance of the claims, is respectfully requested.

Respectfully submitted, signed and faxed to the USPTO as shown on the accompanying fax transmittal sheet under the signature of the agent of record noted below.



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